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By RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions; Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Expements;—Miscellaneous Intelligence, Poetry and, occasionally, Music.

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TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.

The Monkey.

Monkey, pretty little fellow!
Thou art nature's punchinello,
Full of fun as Puck could be;
Harlequin might learn of thee!

Look, now, at his odd grimaces!
Saw you e'er such comic faces?
Now, like learned judge, sedate,
Now, with nonsense in his pate!

Nature, in a sunny wood,
Must have been in merry mood,
And with laughter fit to burst,
Monkey, when she made thee first.

How you leaped and frisked about,
When your life you first found out;
How you threw, in roguish mirth,
Cocoa nuts on mother earth:

How you sate and made a din
Louder than had ever been,
Till the parrots, all a-riot,
Chattered too to keep you quiet.

Little merry monkey tell,
Was there kept no chronicle!
And have you no legends old,
Wherein this, and more is told?

How the world's first children ran
Laughing from the monkey-man,
Little Abel and his brother,
Laughing, shouting to their mother?

And could you keep down your mirth,
When the floods were on the earth;
When from all your drowning kin,
Good old Noah took you in?

In the very Ark, no doubt,
You went frolicking about;
Never keeping in your mind,
Drowned monkeys left behind!

No, we cannot hear of this;
Gone are all the witnesses;
But I'm very sure that you
Made both mirth and mischief too!

Have ye no traditions; none
Of the court of Solomon?
No memorial how ye went
With Prince Hiram's armament?

Were ye given, or were ye sold,
With the peacocks and the gold?
Is it all forgotten quite,
'Cause you neither read nor write?

Look now at him! Slyly peep!
He pretends he is asleep;
Fast asleep upon his bed,
With his arm beneath his head.

Now that posture is not right,
And he is not settled quite—
There! that's better than before,
And the knave pretends to snore!

Ha! he is not half asleep!
See, he slyly takes a peep!
Monkey, though your eyes were shut
You could see this little nut.

You shall have it, pigmy brother!
What, another and another?
Nay, your cheeks are like a sack—
Sit down and begin to crack!

There, the little ancient man
Cracks as fast as fast he can!
Now, good bye, you merry fellow,
Nature's primest Punchinello!

The Old Woman of Derry.

"There was an old woman, and she, and she"—
So ran an old ballad that used to be.
We knew an old woman, and we, and we,
Know a comical part of her history.
She had an odd habit, a troublesome trick,
Of asking if people were healthy or sick,
And whether the answer came "yes" or "no,"
Her constant reply was, "God keep 'em so!"
Well, meeting a youngster, she said to him, "Ah,
Well, how are you, Johnny, and how is your ma?"
And Johnny, the joker, replied to the dame,
"I'm much of a muchness, and mother's the same!"
Then said the old woman of Derry, "Oh, ho!
Well, blessed be heaven, and God keep you so!"

PENFIELD'S LOCO-STATIVE.

Fig. 1.

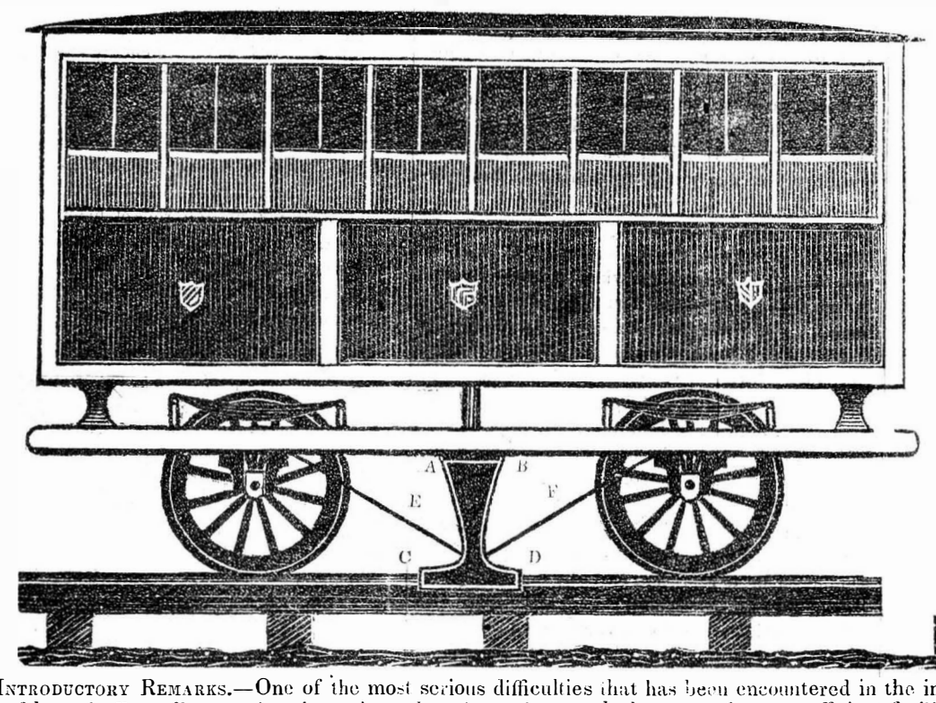
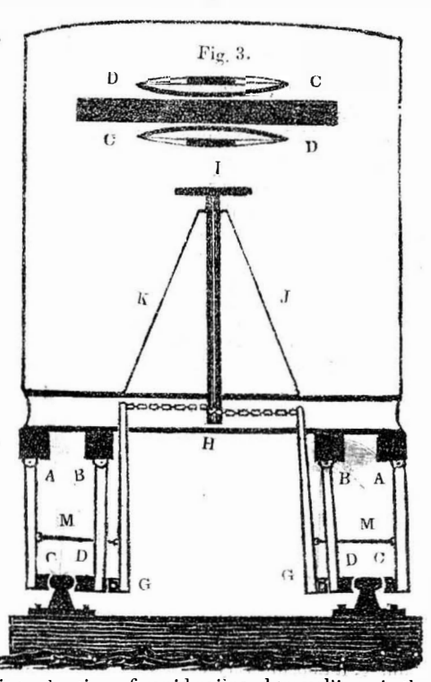


Fig. 2.



INTRODUCTORY REMARKS.—One of the most serious difficulties that has been encountered in the introduction of rapid railroad travelling, is that of safely and effectually stopping the trains when in motion: and the want of some efficient facilities for this purpose, has been the cause of more than four-fifths of the calamitous disasters which have occurred on railroads since their introduction. Various modes have been introduced for applying friction to the car-wheels by what are termed brakes; but these have proved utterly inefficient, and especially when the rails have been slightly glazed with ice. To remedy this difficulty by supplying this important deficiency, is the object of the improvement here introduced.

EXPLANATION.—Figure 1 presents simply a side view or elevation of a light car, with the apparatus attached. Figure 2, is a sectional end view of the same, but without the wheels; and fig. 3 shows a vertical view of the clamps which apply to the rail. The clamp-shafts A B, are firmly connected to the side beams of the car, by hinge-bolts and eyes, and descending to the rails, are attached to the clamps C. D, which occasionally clasp the sides of the rail. The clamp-shafts are supported by the braces E F, which extend back and forward to the rail. It will be seen by the form of the clamps C D, in figures 2 and 3, that the iron faces of the clamps are made concave to conform to the sides of the rail, and that the foot of each clamp shaft is secured between two steel springs, the ends of which are attached to the ends of the iron clamp, in such a manner that the elasticity of the springs will accommodate any slight unevenness in the rails. To the bottom of each inside clamp (D, fig. 2) a lever, G, is attached by a hinge joint, and extends upward nearly to the body of the car; and from the head of each lever, a chain extends to the lower end of a vertical shaft H I. This shaft extends up into the centre of the car, being supported by the braces, J K, and terminates in a horizontal hand-wheel I. The levers are also connected to the outside clamp-shafts (A C fig. 2) by an iron rod M, so that when the hand wheel is turned, the levers are drawn towards the shafts, and the clamps are forced against the sides of the rail. There are various plans projected for applying eliptical or other springs, to increase the elasticity of the apparatus, also for applying power or force thereto: but the foregoing is sufficient to illustrate the principle both of the construction and application. Invented by Henry F. Penfield, Esq., of Buffalo, N. Y.

NEW DIAMOND MINES IN BRAZIL.—More than a year since some Brazillians discovered diamonds in the bed of a river among the mountains, about seventy leagues North West of the city of Bahia. During the dry season there is but little water in the river, and at the present time there are about 10,000 persons living on the banks, in huts, tents, and out of doors, a miscellaneous collection of all nations and colors, who seem to have but one trait in common, which is, that all are a most villanous, assassin-looking set, who rob and kill each other with little compunction, as immediately on the news of the discovery spreading, all of the blackleg species from all parts of Brazil flocked to this quarter. No very large diamonds have been found, and all are rather more brittle than the common Brazil diamonds, and inferior to those found in the East Indies. The quantity found has been so large as to reduce the price in Brazil thirty-three per cent. Many have been valued at from $10,000, to 25,000 each. An English house in Rio Janeiro, has purchased over two quarts, costing in the rough $600,000, which were sent to London, where they will be polished.

All the diamonds that have been found in the world it is said would not fill a bushel basket. Probably this new mine will tend to heap the basket up a little.

The earth is removed from the bed of the river and carefully washed. The mud floating off, leaves sand, pebbles, and sometimes diamonds at the bottom. If after years prove as productive as the first, diamonds will be a drug, as the product is calculated at over three millions of dollars in value, for twelve months past.

BARYTES VS. WHITE LEAD.—A mine of barytes is opened in Whately Mass., about four and a half miles from Northampton depot, and about a quarter of a mile from the track, which will furnish six hundred tons a year. The article has heretofore been sent to New Haven by the canal, and there ground for market and use. In this state it has sold at Philadelphia for $40 a ton. This barytes is a heavy whitish stone, with a metallic lustre resembling silver. Ground and mixed with oil and spirits of turpentine, it makes a shining white paint which soon becomes hard. It is also mixed with white lead, the better to adapt it to some uses. Taken internally it operates as a virulent poison. Is said to be mixed with much of the white lead in use, and its effect is seen in the dingy color of many white painted buildings. It is considered difficult now to find any white lead which is not adulterated with it: but it is a gross fraud which ought not to be tolerated.

YANKEE ENTERPRISE.—John Ricord, Esq., lately appointed by the King of the Sandwich Islands, Attorney-General of that Kingdom, is a young American lawyer, who joined the Oregon expedition which left St. Louis two years since, he arrived there poor and friendless, and passed on to the Sandwich Islands, and became a subject of that King, and received the appointment, with a handsome salary.

IMPERTINANCE PUNISHED.—We find in the Courrier des Etats Unis an account of a very curious incident which occurred at a charity fair in Paris. A young lady, Miss ——, celebrated for her beauty and her wit, presided at one of the tables. Among the throng, which pressed around the fair vender of elegant fancy articles, was a young gentleman of much assurance, who gazed upon the lady with offensive freedom, and affected to admire the various articles exposed for sale, but he bought nothing.

"What will you please to buy, sir," asked Miss A——, with a smile of peculiar meaning.

"Oh," replied the exquisite, with a languishing look, "what I most wish to purchase is unhappily not for sale."

"Perhaps it is," said the lady.

"Oh no—I dare not declare my wishes."

"Nevertheless," said Miss A——, "let me know what you wish to buy?"

"Well, then, since you insist upon it, I should like a ringlet of your glossy black hair."

The lady manifested no embarrassment at the bold request, but with a pair of scissors immediately clipped of one of her beautiful locks and handed it to the astonished youth, remarking that the price was *five hundred francs*!

Her bold admirer was thunderstruck at this demand, but dared not demur, as by this time a group had collected, and were listning to the conversation. He took the hair paid over the five hundred francs, and with an air of mortification and sadness left the hall.

IRISH CUNNING.—In a parish in the county of Sligo, a certain man stole a pig from his own parish *priest*. A short time after the priest held a station, for the purpose of hearing confessions. Among other persons the man who stole the pig came to confess, when the following dialogue took place:

Man—"I stole a pig, your reverence."

Priest—"What do you mean to do with it, you vagabond?"

Man—"I'll give it to you, your reverence."

Priest—(in a great passion) "Do you want to make me the receiver of stolen goods?"

Man—"And sure, what will I do with it, your reverence?"

Priest—"Give it the right owner, sir?"

Man—"I offered it to him and he woul'nt take it, your reverence?"

Priest—"Then keep it, and my blessing with it."

A DOUBLE-HEADED BULL. A farmer was telling of a remarkable calf with two heads; an Irishman inquired how large a calf it was, and was answered that it was full grown and very large. "A full grown calf," says Pat, "surely now that must be a bull."

THE BEST STYLE.—That style which comprehends few things in many words is weak, but when many things are comprehended in few words, the style is always strong, though it may not be beautiful. Flowers are pleasing, but all flowers without fruit, is worse than fruit without flowers.

DECIDEDLY A GOOD ANECDOTE.—An old lady, resident of a neighboring place, kept a large family of turkeys, perhaps sixty. She, like a great many other people, thought a great deal of her turkeys, consequently valued them very highly. Opposite her door was a West India good's store; the man who kept it one day emptied his casks of cherries, intending to replace them with new. This old lady being economical, thought it a great pity to have all these cherries wasted, and in order to have them saved, she would just drive over her turkeys and let them eat them. In the course of the day the old lady thougbt she would look after them and see they were in no mischief. She approached the yard, and lo! in one corner laid her turkeys, in one huge pile dead! Yes, they were "stone dead." What was to be done? Surely the old matron could not lose all the feathers. She must pick them. She called her daughters and picked them, intending to have them buried in the morning. Morning came, and behold, there were her turkeys stalking about the yard, featherless enough, as may be supposed, crying out "quit, quit;" feeling no doubt mortified that their drunken fit had been the means of losing their coats. Poor things, if they had said "quit," before they had begun they would not have been in this bad fix. We would advise all young men, who are in the habit of drinking, to leave off before they get picked; and to those who do not let every young lady say "quit."

THE RETIRING BANKER'S ADVICE.—A story is related of a celebrated banker in Europe who carried on business successfully for years with the reputation of great wealth. In his old age he retired from business and transferred it to his two sons, to whom he gave the following advice: "My sons, I leave you in possession of my business and my capital. My capital, as you know, is locked up in that strong box, which has not been opened for years, because my profits have been such, that I had no occasion to encroach upon it. I charge you to pursue the same course. Never open the box, for if you once begin to run upon your capital you will in all probability lose it." The sons obeyed their father's mandate for a series of years, with the same credit and reputation for wealth that their parent had enjoyed; for everybody knew that the sons were in possession of the old gentleman's strong box. In process of time, however, the box was opened, and behold, it contained—NOTHING. This fact becoming known, the credit of the bankers failed, and they were ruined.

TALKING LARGE.—A shoe dealer in Worcester, informs merchants throughout the United States that he has 400 pairs of boy's boots to sell for cash. Gentlemen merchants will approach by the road leading from the right, and depart by the left to prevent confusion! A constable will be in attendance to preserve order.—*Barre Pat.*

PALPITATIONS.—Palpitations of the heart, occurring in young ladies, may often be cured by sending for the doctor; but it is frequently necessary to call in the Captain, and, in some instances, the Parson.

PATENT LAWS.

(Continued from No 23.)

SEC 18. That whenever any patentee of an invention or discovery shall desire an extension of his patent beyond the term of its limitation, he may make application therefor, in writing, to the Commissioner of the Patent Office, setting forth the grounds thereof; and the Commissioner shall, on the applicant's paying the sum of forty dollars to the credit of the Treasury, as in the case of an original application for a patent, cause to be published in one or more of the principal newspapers in the city of Washington, and in such other paper or papers as he may deem proper, published in the section of the country most interested adversely to the extension of the patent, a notice of such application and of the time and place when and where the same will be considered, that any person may appear and show cause why the extension should not be granted. And the Secretary of State, the Commissioner of the Patent Office, and the Solicitor of the Treasury, shall constitute a board to hear and decide upon the evidence produced before them, both for and against the extension, and shall sit for that purpose at the time and place designated in the published notice thereof. The patentee shall furnish to said board a statement, in writing, under oath, of the ascertained value of the invention, and of his receipts and expenditures, sufficiently in detail to exhibit a true and faithful account of loss and profit in any manner accruing to him from and by reason of said invention. And if, upon a hearing of the matter, it shall appear to the full and entire satisfaction of said board, having due regard to the public interest therein, that it is just and proper that the term of the patent should be extended by reason of the patentee, without neglect or fault on his part, having failed to obtain, from the use and sale of his invention, a reasonable remuneration for the time, ingenuity and expense bestowed upon the same, and the introduction thereof into use, it shall be the duty of the Commissioner to renew and extend the patent, by making a certificate thereon of such extension, for the term of seven years from and after the expiration of the first term; which certificate, with a certificate of said board of their judgment and opinion as aforesaid, shall be entered on record in the Patent Office; and thereupon the said patent shall have the same effect in law as though it had been originally granted for the term of twenty-one years; and the benefit of such renewal shall extend to the assignees and grantees of the right to use the thing patented, to the extent of their respective interests therein: *Provided, however*, That no extension of a patent shall be granted after the expiration of the term for which it was originally issued.

SEC 19. That there shall be provided, for the use of said office, a library of scientific works and periodical publications, both foreign and American, calculated to facilitate the discharge of the duties hereby required of the chief officers therein, to be purchased under the direction of the Committee of the Library of Congress. And the sum of fifteen hundred dollars is hereby appropriated for that purpose, to be paid out of the patent fund.

SEC. 20. That it shall be the duty of the Commissioner to cause to be classified and arranged, in such rooms or galleries as may be provided for that purpose, in suitable cases, when necessary for their preservation, and in such manner as shall be conducive to a beneficial and favorable display thereof, the models and specimens of compositions and of fabricks, and other manufactures and works of art, patented or unpatented, which have been, or shall hereafter be, deposited in said office. And said rooms or galleries shall be kept open during suitable hours for public inspection.

SEC. 21 That all acts and parts of acts heretofore passed on this subject, be, and the same are hereby, repealed: *Provided, however*. That all actions and processes in law or equity sued out prior to the passage of this act, may be prosecuted to final judgment and execution, in the same manner as though this act had not been passed, excepting and saving the application to any such action of the provisions of the fourteenth and fifteenth sections of this act, so far as they may be applicable thereto: *And provided also*, That all applications or petitions for patents, pending at the time of the passage of this act, in cases where the duty has been paid, shall be proceeded with and acted on in the same manner as though filed after the passage thereof.

JAMES K. POLK,
Speaker of the House of Representatives.
W. R. KING,
President of the Senate pro tempore.
Approved July 4, 1836.
ANDREW JACKSON.

To be continued.

SHORT AND SWEET.—Divers plans of courtship are laid down in books, and none takes our fancy like the following, adopted by a couple recently:

"Miss Adela, will you marry me?"

"Well, Thomas, I 'spose I must."

"I'll be much obliged to you if you will."

Then he kissed her, and the business was settled right off.

INDUSTRY.—Men must have occupation or be miserable. Toil is the price of sleep and appetite, of health and enjoyment. The very necessity which overcomes our natural sloth is a blessing. The world does not contain a briar or a thorn that divine mercy could have spared. We are happier with sterility which we can overcome by industry, than we could be with spontaneous and unbounded profusion.

THE MISER.—An unfortunate fellow went to a miser and asked for a garment, saying that his object was to have something to remember him by. "My friend," said the miser, "as thy end is to remember me, I shall give thee nothing; for I am sure thou wilt remember a refusal much longer than a gift.

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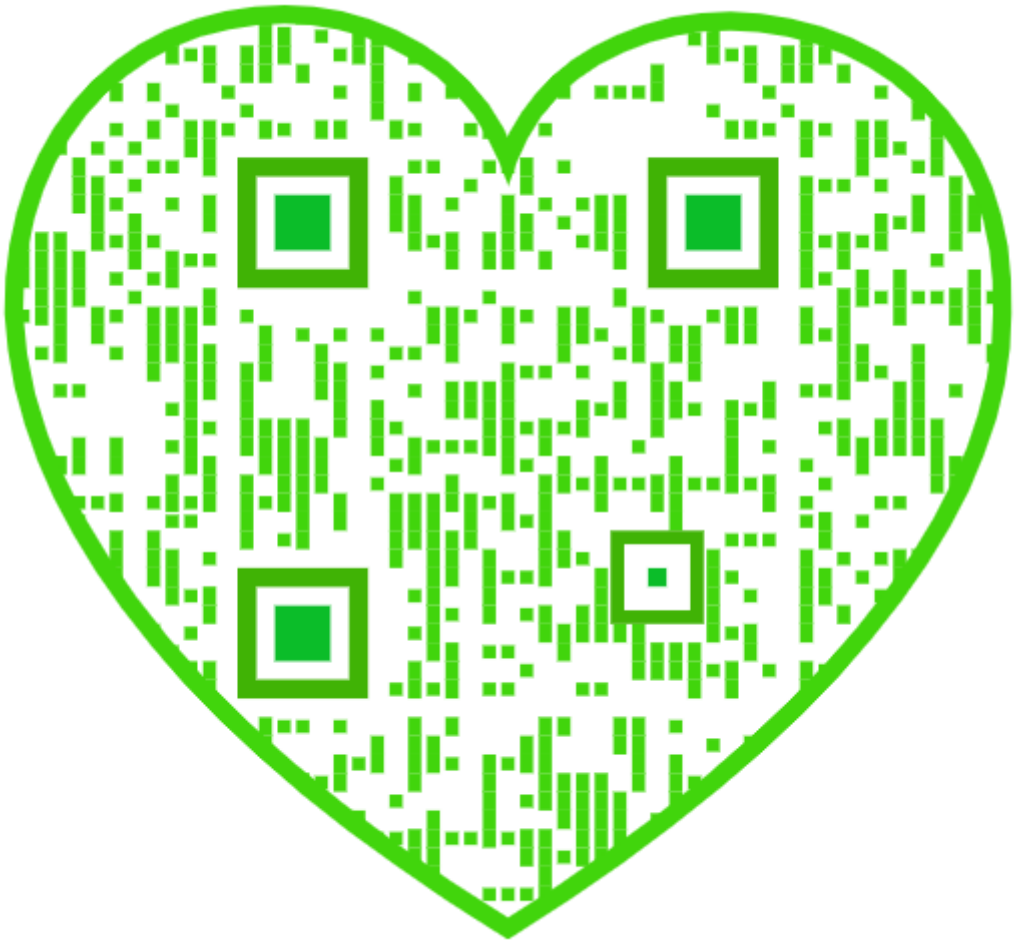
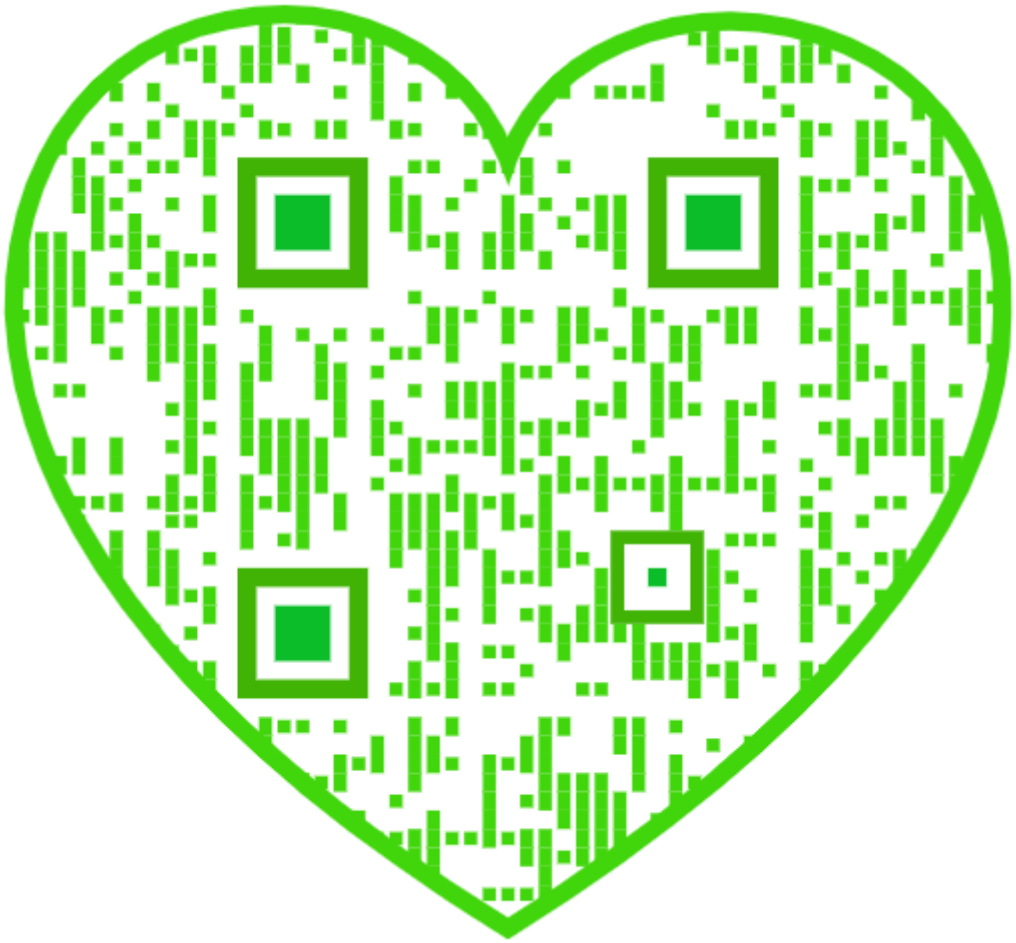




SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, FEBRUARY 26.

POST MASTERS—Who receive this paper, will confer a special favor by mentioning the subject occasionally to scientific mechanics.

AGENTS WANTED.—Many travelling and local agents are wanted, to introduce and extend the circulation of this paper, in every principal village in the United States.

THE CASH SYSTEM.—Our patrons are aware that we are constrained to adhere strictly to the cash system rules; and on this account it may be as well for those who reside at a distance, to send the second one-do llar remittance, in season for us to receive it prior to the publication of our 27th number, that the paper may be continued in regular order.

PATRONS IN CITIES.—We would say once for all to those who receive this paper from local agents, that if at any time the papers are witheld or not received by such agents, it may be supposed that there is some delinquency of payment. One or more of our agents are in arrears, and we may feel contrained to withold the paper on that account.

ADVERTISING.—This paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics' tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies; our terms are moderate, and all favors in this line will be duly appreciated.

Illustrations of Chemistry.

(Continued from No. 23.)

ACIDS.—The acids which are most generally known as such, are the Sulphuric, Nitric, Muriatic, Carbonic, Tartaric, Citric, Acetic, Fluoric, Boracic and Prussic. The Sulphuric acid consists of a chemical combination of sulphur and oxygen, in a colorless liquid form. This acid readily dissolves iron and zinc, and some other metals; and combined with the alkalies and earths, forms a variety of neutral salts.

The Nitric Acid is a liquid combination of nitrogen and oxygen. It is colorless and transparent, but produces an indellible yellow stain on the skin. It is corrosive, and readily dissolves silver, mercury copper and tin; and produces in combination a variety of metallic crystals and other salts.

Muriatic Acid is usually obtained from sea salt, which is a muriate of soda. It is corrosive, and dissolves some of the metals. It combines with silver when dissolved in the nitric acid, and precipitates it from its solutions. It dissolves marble, and other combinations of lime, with avidity.

The Carbonic Acid is a combination of carbon and oxygen, and is the principle which constitutes the vivacity or smartness of fermented liquors, and of mead and soda water. It has an affinity for the alkalies and earths, but is driven off in the form of gas by the presence of most of the other acids.

The Tartaric Acid is procured from wine. It is much used by dyers, and in combination with potash, it forms tartrate of potash, or cream of tartar.

The Citric Acid is procured from lemons,

The Acetic Acid is the eommon venegar concentrated.

The Fluoric Acid is procured from Fluor Spar, and has the peculiar property of dissolving glass, silex, and rock crystals.

The Boracic Acid is principally known in its combination with soda, in the substanee called borax.

The Prussic Acid is a remarkably violent poison. It is much used in coloring, and forms many different colors by different combinations.

EXPERIMENTS.—Dissolve caustic soda in hot sulphuric acid, to saturation: as it cools, crystals will be formed which prove to be the common glauber salts.

Dip a piece of tin foil in diluted nitric acid: It will almost instantly be dissolved and disappear.

Dissovle mercury in nitric acid, diluted with an equal quantity of water; when the acid has ceased to act on the mercury, wash a piece of bright copper with the solution, and it will appear white like silver.

Paint any figures or fllowers on a piece of marble with common oil paint; dip the figured surface in diluted muriatic acid, and in a short time the acid will be found to have taken off the surface of the marble between the painted figures, leaving them raised in relief. The paint may be removed and the figures will remain.

Add a little carbonate of soda, (saleratus) to very dilute muriatic acid; the carbonic gas will be expelled so rapidly as to produce a violent ebulition.

Spread over the surface of a piece of glass, a little melted beeswax, and with the point of a needle draw any letters or flowers by scraping off the wax; then pour over the wax a little fluoric acid, and in a little time the figures will have been fairly etched in the glass, and will remain permanent when the wax is removed.

(To be continued.)

THE WANT OF TELEGRAPH LINES.—The late disastrous storm commenced at Charleston, S. C., on Friday afternoon, although it was not noticed here until nearly 24 hours later. Had the Telegraphic lines have been in operation from Charleston, notices of the approaching storm might have been communicated along the coast, and many vessels which have been wrecked, might have remained in port, or gained safe harbors before the storm approached.

Galvanism.

Continued from No. 20.

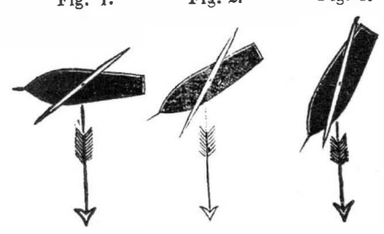
ELECTRO-PLATING.—We sometime since introduced this subject, and in No. 15 described the principal process of preparing a solution of gold, and the application of the electric current in depositing the same, in all its metallic brilliancy, on the baser metals. We now resume the subject for the purpose of giving further illustrations of this art in its various branches, as applied to watch-cases and jewellery. In the ordinary jewel alloys the gold is alloyed with silver and copper in different proportions. The preparation of the silver solution has been already shewn. To prepure a solution of copper for this purpose, dissolve any quantity of the sulphate of copper (blue vitriol) in water, and add thereto a sufficient quantity of a solution of the cyanuret of potassium, to precipitate the copper solution to a reddish olive color. If too small a quantity of the cyanuret is used, the copper will take a green olive color, but will not be wholly precipitated; and if too much cyanuret is added, the precipitate will be prematurely re-dissolved; but when it assumes an olive, tinged with red, it may be first agitated or stirred with a stick or strip of glass and left at rest a few minutes for the precipitate to settle. Then pour off the transparent liquor from the precipitate, and add fresh water, and again let it settle. Repeat this two or three times, by which the sulphuric acid which was formerly combined with the copper, will be washed away; then add the solution of cyanuret sufficient to re-dissolve the copper precipitate, and dilute the solution with water, in the proportion of a pint of water to an ounce of sulphate of copper. By this solution when used by itself, in the galvanic font, any article of iron, brass or tin, may be beautifully coated with brilliant metallic copper. It may here be remarked, however, that all the metallic cyanide solutions, and especially the copper, will work much more freely when warm, than in a cold state.

To be continued.

Science of Mechanics.

(Continued from No. 23.)

Fig. 1. Fig. 2. Fig. 3.



INDIRECT ACTION AHD RESISTANCE OF FLUIDS.—To many who are unacquainted with the art of sailing, it appears very mysterious that the force of the wind can be made to propel a vessel in a direction contrary to that in which the wind is moving. To explain this it will be requisite to illustrate more fully the principle of the indirect action of fluids which was introduced in a former number. In the three diagrams are represented three sailing vessels in three different positions, and the relative positions of the sails of each are shown by the straight spar which crosses the deck of each; the supposed direction of the wind being indicated by the arrows. In figure 1, the position of the vessel is at right angles wlth the direction of the wind, while the sail is at an angle of 45 degrees. It will not be difficult for any to unesrstand the manner in which this vessel is affected and propelled forward by the wind, although the vessel does not move at all in the direction in which the wind blows; for vessels that are properly and sharply built, will invaribly move in the direction of their keels, and their motion sideways, if any, will be scarcely perceiveable. The position of the vessel in figure 2, is at an angle of 60 degrees with the direction of the wind, while that of the sail is at an angle of 30 only. In this case the tendency of the sail is not in the direction of the wind, but in a direction at right angles with its own position, which would be at an angle of 60 degrees with the direction of the vessel. Then, as the vessel cannot move sideways, the tendency of the sail is more nearly accommodated by the motion of tne vessel forward, than it would be by its moving backwards, or astern, nothwithstanding that the vessel is thus required to move to the windward. In figure 3, the peculiar effect of the indirect action of the wind on the sail is illustrated more in the extreme: the position of the vessel being at an angle of only 30 degrees, and the sail at only 15 degrees with the direction of the wind or point from which the wind is received. In this case the tendency of the sail is at an angle of 75 degrees with the direction of the vessel, varying but 15 degrees from a right angle: yet this variation of 15 degrees is sufficient to occasion the exertion of an influence forward; and although but a small part of the breadth of the sail is presented to the direction of the wind it is sufficient to give it a decided and rapid motion forward, if the vessel be sharp built and well trimmed. In all cases, the force exerted by a moving fluid on a stationary object, is precisely the same as its resistance to a moving object, the velocities in each case being the same.

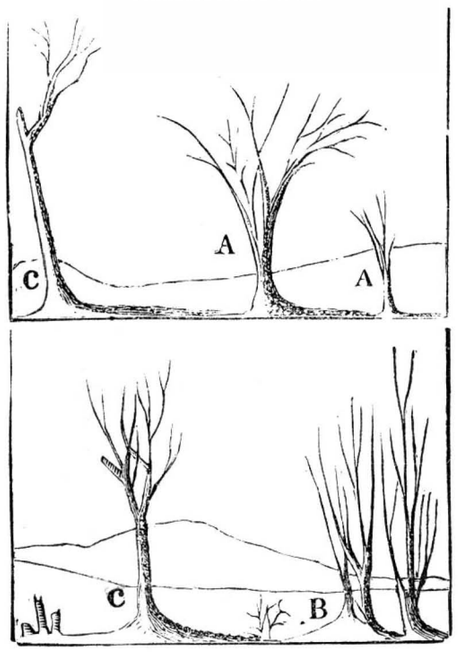
(To be continued)

ARRIVAL OF THE CAMBRIA.—The steam-ship Cambria, arrived at Boston on Thursday, bringing London dates to the 4th inst. The steamer had been anticipated a few hours by an extraordinary express from Halifax, and the news was received in this city at 9 o'clock on Thursday morning. The only news of importance by this arrival, is that of the apparently pacific disposition of the British Government, and the probable repeal of the corn laws. The Queen delivered a very smooth and pretty speech to the new Parliament, on the 22nd ult. The English people do not appear to attach much importance to the difficulties between the two Governments at present.

GOLDER'S CREDIT SYSTEM.—We were yesterday shewn the constitution of a new Association recently formed for the express purpose of introducing this accommodating system to the public. The proposed plan of management, is peculiarly liberal, and can not fail of being profitable to the stockholders as well as accommodating to working men.

The Art of Painting.

Continued from No. 23.



LANDSCAPE PAINTING ON WALLS.—The shores of capes and islands, and rocks in general, on the first distance, or about the shores of the 2d and 3d distances, are painted with *stone-brown*, (a mixture of yellow ochre, venitian red, and black, in such proportions that neither of those colors shall appear to predominate in the compound.) When this color is applied to the rocks or shores of the third or fourth distances, it is to be mixed with sky-blue, in different proportions according to the distance, being reduced to a very pale color, on the fourth. This rule also applies to the shading and heightening of objects. Rocks are usually shaded with black or blue-black, and heightened with horizon red, reduced with sky-blue in the distances, as before mentioned. The water immediately under the capes and islands on the shores of lakes and rivers, must be shaded with a color composed of blue-black, reduced with sky-blue. This color is diluted more than usual, and brushed on the work very slightly with a cutting-brush; the brush being drawn lightly so as not to apply the color in full. The brush must be drawn steadily, horizontally, and this shading is made deeper where the shore is covered with trees, or other dark objects; the object of the shading being to represent partially and faintly the reflection of the shores and trees in the water. If a calm and still water is to be represented, however, the rocks, trees and other objects on the shore must be represented in an inverted position, in their proper colors, but subsequently rendered partially obscure by having a thin, transparent wash of the shading color, slightly brushed over them. The process next in order, is that of drawing the stocks and branches of the nearest trees,——those of the first distances on the foreground. These are drawn with a cutting brush, with paint of a light slate-color (a mixture of black and white, slightly tinged with venitian red.) The trees usually represented on this ground, are elms, oaks, hickories and maples; and should be so arranged in the design as to set off the distant objects to the best advantage, and fill up such spaces on the walls, as could not be otherwise conveniently occupied. The location of these trees should be anticipated in the formation of the foreground, as it is natural for large trees to occasion swells of land about their bases. The stocks and branches of these trees are then shaded on the sides opposite the principal windows or light of the rooms, with black or a mixture of black and red; and the sides towards the light, are heightened with horizon red. Both the shading and heightening are applied with a cutting brush, and dexterously graduated from the sides to the centres, in waved or short irregular stripes, resembling the rough bark of the trees. (a few samples of the skeletons of trees as they are usually drawn and appear before the foliage is applied, are shown in the engraving, and may be thus designated: A A are elms, and are naturally located in the vicinity of water scenes. B B, maples, most conveniently located about the corners of rooms, where other objects cannot be favorably represented. C C, black oaks, as they are frequently seen when standing in open ground, though very different from their usual appearance in forests. In our next we shall present engravings on the same outlines, but with the same trees loaded with foliage.)

To be continued.

THE WEATHER, &c.—A deep and heavy snow fell on Friday, which was so deeply drifted that most of the railroad trains, especially at the east, were retarded from five to sixteen hours. The snow is unusually deep in this city, and the sleighing fair, and well improved. There was a complete jam of sleighs, extending nearly half a mile in length, in Broadway, on Saturday: the "go ahead" principle was for a time entirely suspended. We had intended to secure a "sleigh-ride" from Fulton street to Maiden lane; but as we could not afford time to ride, we were content to walk. Horses have been in requisition for a few days—no mistake.

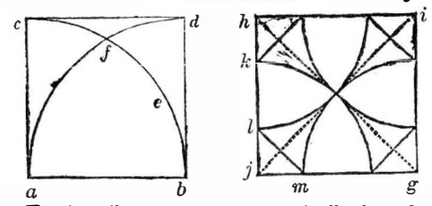
PLUMBE'S GALLERY OF PORTRAITS.—We have diligently watched the progress of the Daguerrean art, from its first introduction, and frequently expressed our confidence in its ultimate approach to perfection; but on taking a recent stroll among the multitude of eminent statesmen, heroes, and beauties which presented their faces from all sides of the National Daguerrean Gallery, 251 Broadway, we were constrained to admit that Professor Plumbe had exceeded our anticipations. We recognised many "old acquaintances," who, by the peculiar expression of their countenances, evidently reciprocated the recognition and attempted to present their hands; but, alas! the cruel glass, and limited spaces, in their neat little cases, their civility restraining, against their dispositions, we left them remaining in their dignified positions.

Chain Barrier.

In our last week's paper we stated that the chain stretched across the river Parana, in Buenos Ayres, was cut in about ten minutes, under a heavy fire from the forts. There were no large cannon, however; one or two "peacemakers" might have done the execution even in ten minutes if loaded with explosive projectiles. But the chain-guard invented by Mr. Roosevelt, which has excited considerable interest, is provided with means to prevent it from being cut, either above or under water. In the first place the links of the chain are to be case-hardened; *i. e.* the surface is to be converted to steel, so that no saw may take hold of them under water. To prevent the chain from being drawn out it is proposed to sink hulks loaded with stone, or if more advisable, spiles may be driven in, and chains suspended from the main chain, to hold it under water. Then by filling one counter ballancing weight with water, and emptying the other, a motion across the edge of the enemy's saw is effected, and it may thus be broken before it can cut even soft iron. It may be hauled up against the saw, and then let down below the gearing to crush it at one time, and drawn beyond its reach at another. In a word, the weights may be so worked as to break the saw by moving the chain back and forth and up and down, while attempts are being made to saw it under water. We do not see any objection to the practicability of rendering it efficient as a harbor guard, and it will not be liable to the inconvenience of a row of sunken hulks, which would be in the way of our own ships, as well as of the enemy's. *

RUM AND SNOW-STORM.—During the snow storm on Saturday evening, a man left Nashua village, N. H., with a gallon of rum, with which he probably intended to keep himself comfortable on Sunday. He was found dead the next day, under a snow-drift, within sixty rods of his house, having, as appeared by the imprints, fallen down sixteen times before his last fall. We think the Nashua papers at fault in not publishing the name of the knave who sold him the liquor.

Problems in Practical Geometry.



To describe a *square* geometrically, let *a b* represent one side, then with the distance *a b*, as a radius, and on *a*, describe the quadrant *b e f c*,; also on *b* describe the arch *a f d*, cutting *b e f c* at *f*, divide *b f* into two equal parts, as shown at *e*; make *f d*, and *f c*, each equal to *f e*—draw the lines *a c*, *c d*, and *d b*. This figure is *rectangular* because its angles are right angles, and *quadrangular*, because it has four angles. To describe an *octagon*, (a figure with eight equal sides) in a geometrical square:—from the opposite angles of the square draw the diagonal lines *i j* and *h g*; the intersection of the diagonals, will be the centre of the square. From each angle describe a quarter-circle, (or quadrant) with a radius equal to one-half of *i j*, and cutting the sides of the square at *k l m*, &c.—draw the side *l m*, which will be equal to *l k*, &c.

A GREAT BULL-HUMBUG.—The London Pictorial Times, of Jan. 17, comes out with a large and expensive engraving, and a highflown description of a great grand invention, entitled the "Leviathan Atmospherie Engine," which is to be propelled with great speed, over heavy ascents by a power equal to 20,000 horses, and that without steam or any other power but that of a quantity of compressed air, issuing from two small cylinders, and to be replenished by the way by the power of two small awkward wind-wheels, which are to be operated by the resisting atmospheric air, encountering the floats or fans, as the engine passes through it, &c. This swelling invention is attributed to R. R. Reinagh, R. A., and the tedious rigmarole of complicated machinery is given by "the accomplished artist and engineer himself," who represents that the cost of the power for propelling the engine *will* be "200 *times less* than that of steam." Yet with all this glaring and palpable absurdity, we shall not be surprised to find that the contemptible humbug is swallowed, wind wheels and all, by some of our would-be-thought scientific cotemporaries. We shall see.

PHONOGRAPHY.—We have been induced to give more attention to this subject within a few days past, than ever before. The two prominent system now before the public, are those of J. Pitmau, of Bath, England, and K. A. Bailey, The first of these is taught and advocated in this city by Mr. H. J. Hudson, and the latter by Mr. Moody. We shall give each system a thorough examination, and report according to our conviction; but are not prepared to intimate a preference at present. We can only say that we find some excellent peculiarities in each, and that we find reason to attach more importance to the subject in general, than hitherto. We shall in a few days, procure the cuts of the characters, and present the same, with explanations, to the consideration of our readers.

Mr. Hudson has taken rooms in the basement of the Church of the Divine Unity, between spring and Prince streets,—entrance on Broadway. The first class-lesson, on Wednesday evenlng, 25th inst., will be open to all ladies and gentlemen, who wish to see a practical exhibition (by different gentlemen acquainted with the system) of the powers of Phonography, as adapted to common correspondence as well as verbatim reporting. A full attendance is invited. Hours for classes Mondays, Wednesdays, and Fridays:—4 1-2, 5 1-2, 7 1-2, and 8 1-2 o'clock, P. M.

RIGHT OF WAY.—This is creating great excitement in Pennsylvania. The Pittsburgh merchants, it is said, are about to sign a paper refusing to have any commercial intercourse with Philadelphia, unless the merchants of that city withdraw their opposition to the right of way.

VARIETY

The Captain and crew of the schooner Empire report that when off the Capes of Virginia, a huge serpent appeared and raised his head over the taffrail; but immediately retreated. He was about 50 feet long.

A quantity of liquor was recently purchased in Maine with the intention of making a public bonfire of it; but it was subsequently discovered that it had been too much diluted to burn.

The news by the Cambria passed through Portland on Wednesday; but they had no chance to know what it was till it had reached Boston and returned the next day.

One of the expresses which brought the news to this city, on the arrival of the Cambria, was only seven hours and five minutes between Boston and New York: 240 miles.

Upwards of 10,000 emigrants have embarked at Toulon for Algeria within the last three months. It appears truly mysterious what sufficient attraction can exist in that quarter.

A slave named Horace King has been emancipated by the Legislature of Alabama, in consideration of his having constructed a bridge at Wetumpka. His owner had refused $15,000 for him.

The fluctuations and changes of fantastical fashions in dress are said to cost the people of the United States five hundred millions of dollars per annum. So much for the whims of dandy tailors.

The Texas Bible Society has resolved to supply every family in the state with a copy of the Scriptures, and $1000 worth of Bibles have been already received for that purpose.

During the last five years the increase of native population in the State of New York, has been only 453, while the increase of foreign population has been 179,000!

It is suggested that every town ought to have at least two churches to one tavern or rum-shop, inasmuch as one groggery will make more criminals than one church can reform.

Prayers were lately offered up in all the churches of Paris, "for the entire return of the English nation to the Catholic, Apostolic, and Roman faith."

A Western paper states that in one town in Massachusetts, there are five hundred families without a bible. If such is the fact, that *town* must be Boston, of course.

The term "loafer" is derived from the Greek word *lophas*, which signifies to live at ease; and not, as reported, from the habit of dining on a penny-loaf at a grocery.

The Swiss Bell-ringers, since their arrival in this country, have travelled 25,000 miles, given 329 concerts, and cleared upwards of $30,000. So says an exchange paper.

The train of cars which left the depot at Boston, on Monday evening of last week for Lowell, encountered a snow drift eight feet deep, which they ploughed through and proceeded to Lowell.

A newspaper, printed on silk, is published weekly in Pekin, China. Some of the numbers measure more than 30 feet in length. Who says China is not ahead of us?

Who has not heard of Charlotte Temple? The house which was recently burned at the corner of Pell street and the Bowery, was the identical house in which Charlotte died.

The new Constitution of Missouri provides that the property of the survivors of a duel, shall be holden for the maintenance of the widow and children of the victim killed.

Smith's Paper Mill, at Greenville, Conn., is said to turn out about thirty miles of paper per day in length. The average width is probably from three to four feet.

The American operatives have been discharged from a cotton factory in Cincinnati, and their places filled with Germans, who work for much less than Americans.

We learn from an exchange that Professor Morse has invented a secret alphabet for secret correspondence. An excellent idea; it should be *published* forthwith.

An ingenious mechanic in this city, has been for some time engaged in the construction of a miniature model of the city of New York. It is expected to be finished in about two months.

The Western Railroad Directors, recommend a reduction of the fares. It is well that they are waking up to the subject.

Five thousand dollars are placed at the disposal of the Mayor and Aldermen of Boston, for the purpose of protecting the city against incenderies.

The manufacture of beet sugar is extensively carried on in Prussia. 483,285 quintals of sugar has been made within four years.

Some modern sage advises all young men, who are in the habit of smoking an occasional segar, to *keep the end in view.*

There are eleven vessels on the stocks in the several ship yards in Baltimore, and in a good state of forwardness. Several more are contracted for.

A bill has been reported in the Alabama Legislature, prohibiting the introduction of slaves into that state, for sale.

Snow is said to be deeper in Albany than it has been for five years. Of course the Albanians must look out for high water, when the snow melts.

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Snow.

BY MRS. SIGOURNEY.

How quietly the snow comes down,
When all are fast asleep,
And plays a thousand fairy pranks
O'er vale and mountain steep.
How cunningly it finds its way
To every cranny small,
And creeps through e'en the slightest chink
In window or in wall.

To every noteless hill it brings
A fairer, purer crest,
Than the rich ermine robe that decks
The haughty monarch's breast.
To every reaching spray it gives
Whate'er its hand can hold—
A beauteous thing the snow appears,
To all both young and old.

The waking day, through curtaining haze,
Looks forth, with sore surprise,
To view what changes have been wrought
Since last she shut her eyes;
And a pleasant thing it is to see
The cottage children peep
From out the drift, that to their eaves
Prolongs its rampart deep.

The patient farmer searches deep
His buried lambs to find,
And dig his silly poultry out,
Who clamor in the wind;
How sturdily he cuts his way,
Though wild blasts beat him back,
And caters for his waiting herd
Who shiver round the stack.

Right welcome are those feathery flakes
To the ruddy urchins' eye,
As down the long, smooth hill they coast,
With shout and revelry,
Or when the moonlight, clear and cold,
Calls out their throng to play—
Oh! a merry gift the snow is
For a Christmas holiday.
The city miss, who, wrapped in fur,
Is lifted to the sleigh,
And borne so daintily to school
Along the crowded way,
Feels not within her pallid cheek,
The rich blood mantling warm,
Like her who, laughing, shakes the snow
From powdered tress and form.

A tasteful hand the snow hath—
For on the storied pane
I saw its Alpine landscapes traced
With arch and sculptured fane,
Where high o'er hoary-headed cliffs
The dizzy Simplon wound,
And old cathedrals reared their towers
With gothic tracery bound.

I think it hath a tender heart,
For I marked it while it crept
To spread a sheltering mantle where
The infant blossom slept.
It doth to earth a deed of love—
Though in a wintry way;
And her turf-gown will be greener
For the snow that's fallen to-day.

Early Piety.

I saw a lovely boy
Kneel down beside a chair,
Then place his head upon his hands,
And sweetly lisp a prayer.
A lovelier sight was ne'er beheld;
No mockery was his part;
That infant form thus bent in prayer,
Might shame an older heart.

And there he kneeled, nor moved he then,
Nor turned his little head,
'Till all his prayer was finished,
The last—last word was said.
I gazed entranced, upon the child,
So artless, young, and pare,
And fondly wished his little form,
Might long with us endure.

But yet, methought that infant mind,
Mild as the breath of even,
Enriched with many mental gems,
Seemed ripening fast for heaven.
Oh, may that power, who governs all,
Forever watch, and guide him,
And spare him here, for many a year,
And evil ne'er betide him,

Faults of Women.

A PARODY ON "THE FAULTS OF MAN."—BY E. B. L.

A thousand faults in woman hide,
Merit in her we seldom find.
Conceited, vain, and filled with pride,
She's inconsistent and unkind,

She's wilful, false, and often rude,
Wild, insincere, and trifling too
Yet still the men, it seems, conclude,
For want of better—*she must do.*

ISN'T IT WONDERFUL.—A correspondent of one of the city papers, give a flowing account of what he considers an extraordinary invention, by some person in Hartford, Md., and which he denominates a Hydraulic Ram. It is a machine for raising water by water-power. The writer admits that machines have long been in use, which being operated by water, elevates a part of *the same* water; but this "long sought improvement," as he terms it, consists in its application to raising *other water*,—spring water, for instance,—by the power of the water of a running stream. He has not given the particular description, but we are inclined to the opinion that the communication is "much ado about" —*a trifle.*

Curious Arts.

TO MAKE GOOD, SHINING, BLACK INK.—Take two ounces of nut-galls in coarse powder; one ounce of logwood in thin chips, one ounce of sulphate of iron; three-fourths of an ounce of gum arabic; one-fourth of an ounce of sulphate of copper; and one-fourth of an ounce of loaf sugar. Boil the galls and logwood together in three pints of water, till the quantity is reduced to one half. Then the liquor must be strained through a flannel into a proper vessel, and the remainder of the ingredients be added to it. The mixture is then to be stirred till the whole is dissolved; after which it must be left at rest for twenty four hours. The ink may then be decanted from the gross sediment, and must be preserved in a glass bottle well corked.

BLUE INK.—Dissolve one ounce of gum arabic in a pint of water. In a part of this gum water grind a small quantity of Prussian blue; you may thus bring it to any depth of color you choose. Indigo will answer the purpose very well, but is not so fine a color, nor will it remain suspended so uniformly in the water.

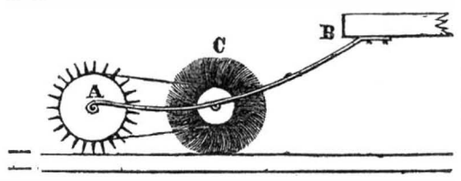
RED INK.—In the above mentioned gum water grind very fine, three parts of vermillion with one of lake, or carmine. This is a very perfect color, but may require to be shaken up occasionally. To make the common red ink, such as is used by bookbinders, for ruling, &c. Infuse half a bound of rasped Brazil wood, for two or three days in a pint of vinegar; than filter or strain it, and add one ounce of gum arabic, and one ounce of alum. It may afterwards be diluted occasionally with water.

YELLOW INK—Steep one ounce of turmeric, in powder, in a half a gill of alcohol, let it rest twenty four hours, and then add an equal quantity of water. Throw the hole on a cloth, and express the colored liquor, which mix with gum water. Rum or other sprits may be substituted in place of alcohol. A solution of gamboge in water, writes a full yellow, but comes far short of turmuric in brightness.

GREEN INK.—To the tincture of turmeric, prepared as above, add a little Prussian blue. A variety of tints may be formed, by varying the proportions of these two ingredients, and no artificial color can excel it in beauty.

PURPLE INK.—To the blue ink as described above, add some finely ground lake; or instead of this, the expressed juice of the deepest colored beets may be substituted, but is more liable to fade. With either of these a variety of tints may be formed, by varying the proportions.

MR. PENFIELD'S IMPROVEMENTS.—In addition to the Loco-stative, or car-stopping apparatus, presented and described on our first page, and which is now in progress of constructiod on a large scale, at Jersey City, Mr. Penfield, has also projected another appendage, to be attached occasionally to the front of a locomotive, for the purpose of effectually clearing the rail from ice. A pair of small wheels, with a series of chisels or cutters projecting from their peripheries, are made to run on the rails, ahead of the engine, and pressed down by a spring or elastic arm, as shewn A B in the following cut. These wheels are closely followed by a pair of rotary brushes, C, which are put in rapid motion by bands or belts, which pass from the axle of the brush, over a pair of small band-wheels, attached to the cutter-wheels, as represented. The wires which constitute the brush, are arranged in a spiral form, so that when in motion they throw off the snow or ice in an oblique direction. Improvement is the order of the day, and we are glad to see a gentleman of Mr. Penfield's capacity, so perseveringly engaged in it.



For the Scientific American.

Mr. Editor—The subscriber would inquire through your columns, what material is best calculated for ornamental chimney tops, in the style of Gothic buildings now so much in vogue. The best cement has failed to stand in exposed positions after three years trial. Copper, lead and iron corode or waste away by the action of gas from anthracite coal. Having been subjected to much expense by experiments, my house is still without this useful and ornamental addition. Bricks moulded to order would answer if they could be obtained. An early reply would oblidge the writer, and secure immediate and profitable employment.

Yours, Enquirer.

New York, Feb. 12, 1846.

In answer to the foregoing, we would say that we have but little personal experience on this subject; but believe there can be no serious objections to the use of cast iron, if properly coated with shellar varnish. Even the ordinary simple cast plaster of Paris, if saturated and coated with this cheap varnish, will prove as durable as brick; and is of all other materials, the most convenient for the purpose.

NAPLES.—It is generally reported by travellers that Naples and its vicinity is favored with the most salubrious climate, fertile soil, and beautiful scenery in the world: yet it is stated that of a population of 400,000, there are 100,000 thieves, 100,000 beggars, and 100,000 priests and church soldiers. And this horrid state of society is immediately attributable to what is called by some, "christian religion," that is, the Roman Catholic Church.

MR. MUNGER'S WATER-WHEEL.—We are bound in justice to Mr. Munger, to correct one of the statements in No. 22, concerning his improved water-wheel. It is there estimated to work *sixty* per cent. of the whole power of the water; but it has been proved by experiment to work about *seventy-five* per cent. There are very few water-wheels in use that will equal this.

Deferred Articles.

The following interesting articles have been on hand several weeks, waiting to find a place in our columns. We don't like to make them wait longer.

MAKING IRON RAILS.—The Sunbury American thus describes the manner in which the iron T rail for railroads is manufactured at the Mootour Works at Danville, Pennsylvania;

In order to make the T rail the iron is first rolled through one set of rollers in heavy flat bars, about three inches in width, and three fourths of an in ch in thickness. These bars are then cut into pieces. something less than three feet in length. A number of the pieces, probably 15 to 30, are then placed together, making a square bundle or faggot weighing nearly four hundred pounds. This faggot is then placed into one of the furnaces and brought to a white heat, when it is drawn out on a small iron hand cart and conveyed to the rollers. The great weight and intense heat of such a heavy mass, requires considerable skill as well as strength, in passing through the rollers. The bar, as it passes through, is caught and supported by iron levers, fastened to chains, that are suspended on pullies from above. The bar first passes through the square grooves of the rollers three or four times, before it is run through the different grooves that gradually bring it to the form of the edge of T rail, as seen upon our railroads. Through the last groover it passes five or six times before it is completed. It is then placed on a small railway carriage, on a track 18 feet wide, and hauled up about twenty feet when the rail comes in contact with two circular saws, one of which is placed on each of the railway. These saws revolve with great rapidity, and the moment the rail, still red hot, reaches them, the red, sparkling iron saw dust is scattered in every direction. The rails are thus cut off square at each end, exactly 18 feet long, apparently as easily as if they were made of tough hickory wood. The rail is then dragged to the pile and leaft to cool, perfectly finished. The rails we saw made were intended for the Harrisburgh aud Lancaster road, and weighed 51 pounds to the yard, or something more than 300 pounds each. These are said to be the first rails ever made wtth anthacite iron in this or any other country, and are, we believe, superior to any that have ever been imported.

WASTING POWER OF RIVERS.—The rivers which flow in the valleys of the Cordilleras ought rather to be called the mountain torrents. Their inclinations are very great, and the water the color of mud. The roar which the Maypu made as it rushed over the great rounded fragments, was like that of the sea. Amidst the din of rushing waters the noise from the stones as they rattled one over another was most distinctly audible even from a distance. This rattling noise, night and day. may be heard along the whole course of the torrent. The sound spoke eloquently to the geologist; the thousands and thousands of stones which, striking against each other, made the one dull uniform sound, were all hurrying in one direction. It was like thinking on time, where the minute that now glides past is irrecoverable. So it was with these stones; the ocean is their eternity; and each note of that wild music told of one or more steps towards their destiny. It is not possible for the mind to comprehend, except by a slow process, any effect which is produced by a cause which is repeated so often, that the multiplier itself conveys an idea not more definite than the savage implies when he points to the hairs of his head. As often as I have seen beds of mud, sand, and shingle accumulated to the thickness of many thousand feet, I have felt inclined to exclaim that causes, such as the present rivers and the present beaches, could never have ground down and produced such an effect. But, on the othe hand, when listening to the rattling noise of these torrents, and calling to mind that whole races of animals have passed away from the face of the earth, and that during this whole period, night and day, these stones have gone rattling onwards in their course, I have thought to myself, can any mountains, any continent, withstand such waste?—*Darwin's Journal.*

SUSPENSION BRIDGE.—A fine wire suspension bridge has been built at Pittsburgh. The ice in the Monongahela began to move and break up in masses lately, snagging the boats, wherries, flats, keels and steamers. Being market day, hundreds of country people were caught on the Pittsburgh side, and no boat could navigate the tumbling, twisting and crackling masses of ice, and all thought of the new suspension wire bridge, but there it was, not finished. An appeal was made to the Architect, and he ordered some few gaps to be covered—opened the barriers and gave the word *pass*, when one unbroken line of waggons, carts, horses, men, women and children passed safely over the beautiful structure without even a quiver from the new bridge.

THE PANAMA CANAL.—The report of the engineer sent by the French Government to examine the Isthmus of Panama, with the view of ascertaining the possibility of cutting a canal through it, has been published. It declares most decidedly for the practicability of the scheme. It recommends that one end of the canal shall be at Vaca de Monte, some few miles to the west of Panama, by the valley of the Caimito; the other at the Bay of Leinon, which is better for vessels than the Port of Chagres, by the valley of the Rio Chagres. The depth to be about seven yards, the width at the bottom about 20 yards, and at the top forty-five. The total length of the canal would be about seventy-six and a half kilometres; the total expense 125,000,000 francs or thereabouts. An immense tunnel would be necessary. The advantage of cutting through this neck of land would be incalculable, and as its cost would be less than that of many a railway, it is to be hoped that either England, France or the United States, or all three together, will, before long, confer that advantage upon the world.—*Tribune.*

A sour godliness is the Devil's religion, Christianity is calculated to make its votaries cheerful—not sullen.

New Inventions.

ELECTRO-MAGNETIC MACHINE.—We are informed that Dr. Page, of the Patent Office, has constructed a new machine for the purpose of producing power from galvanism, for driving machinery, &c. It is admitted, however, that there is but little prospect of its competing with steam in point of economy. We shall endeavor to procure intelligence concerning the peculiarities of its construction.

SEWING MACHINE.—A gentleman in Cambridge, Mass., has completed a machine which occupies a space less than seven inches square, but which is represented to perform wonders in the business of sewing regular and excellent seams, either straight or curved, in cloth of any kind. It is said to set 1000 stitches per minute with perfect regularity. We have not learned the name of the inventor, but are led to believe it a valuable invention.

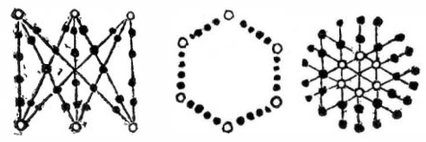
A MECHANICAL CHIROGRAPHER.—We have seldom ever witnessed a more ingenious and perfect combination of mechanical movements, than is displayed in the new writing machine, recently invented by Mr. C. Thurber, of Norwich, Ct., but at present at the Astor house in this city. The machine presents the appearance of a small elegant cabinet, furnished with keys similar to those of a piano; and on the upper part there appears a sheet of paper and metalic pen: and such is the interior mechanism, that when either of the keys is depressed, the pen writes a corresponding alphabetical character on the paper, and at the same time, the paper is moved forward far enough to accommodate a succeeding letter, with a sufficient space between. The characters written are Roman capitals, occasionally varying the size for initials. The lines are written quick and regular, with proportionate spaces between the words; and it may be so arranged as to operate several pens on different sheets at the same time. On this account it will be indispensible for reporting the communications of the magnetic telegraphs. The general utility of this invention, however, requires no explanation, and we trust the scientific inventor will reap a rich reward for his ingenuity and perseverance.

IMPROVED SIGNALS.—Messrs. H. J. Rogers and F. Black. of Washington, have invented and introduced a new system of Semaphoric signals, by which the communication of marine intelligence will be greatly facilitated. They have published a signal book, explanatory of the system.

MUSICAL BED.—A mechanic in Bohemia has invented a bed, in which is concealed some curious musical mechanism, so constructed that when a person presses upon the bed, a soft and gentle air of Auber is played, which continues long enough to lull the most wakeful person to sleep, and generally produces pleasant dreams.

A REVOLVING CLOTHES-LINE.—This is spoken of in several papers as a new invention, though we saw one in operation in Wrentham, Mass., about seven years ago. It consists of eight long arms projecting horizontally from a hub mounted on a pivot, on the head of a post, and one or more clothes lines extending round from arm to arm; so that by moving the big wheel, the laundress may load all the lines with clothes, without moving herself from one position.

ANSWERS OF THE ORCHARD PROBLEM.—We have received several correct answers to the problem in No. 22, in addition to those reported last week; namely, from J. N. H. South Hadley, Mass.; J. W., Enfield, Mass.; C. H. Van W., Albany; N.L. C., Norwich, Ct., and L. J., Norristown, Pa. Of these answers, most of which are diverse from each other, we have selected three which we present below: the 1st from Albany, 2d from Springfield, and 3d from Norwich.



UNPUZZLEABLE.—Our readers—some of them—are almost provoking. We have twice endeavored to puzzle them, (with other people's problems,) but they *won't stay puzzled.* We had not intended to publish anything more in this line; but having received so many answers to the problem in No. 22, we have decided to offer the following of our own. Should any one furnish a correct answer (post paid) we will furnish an engraving of the diagram, and give him credit in full.

A MILITARY PUZZLE.—A military Captain, led into battle a battallion, consisting of 108 men, arranged in nine platoons of twelve men each. During the engagement a third part of his men fell; but by skillful manouvers, he managed to keep his ranks full, and at the close he still had the same number of men (twelve) standing in each of the nine ranks or platoons. Required to know (by diagram) the position of the troops that remained.

THE MAGNETIC TELEGRAPH.—Improvements in the practical working of this new agent, are constantly presenting themselves, especially in the means of facilitating communication. A stenographic system is about to be published, by the use of which, the telegraphic communications may be made as rapidly—or nearly so—as a good writer can copy them.

The people of Utica appear to be much pleased with their facilities of early intelligence from Albany. Many instances are given of the transmission of special intelligence, besides being apprised of the proceedings of the Legislature earlier than it is generally known in the streets of Albany.

The line between New York and Boston is still progressing; the wires are laid from Boston to Worcester, and the posts are erected between Worcester and Springfield.

The line from Lowell to Boston is now completed and will be in successful operation in a few days. The enterprise has been prosecuted under the direction of Mr. Paul R. George, and Miss Sarah G. Bagley is selected as the Lowell superintendent.

The Mother at Prayer.

She enters her chamber. All is quiet and retired. There is no eye to witness her deep emotions, but that of God; no ear to hear her earnest pleadings, but that of the Almighty. A sweet and sacred solemnity pervades her soul. She feels that she is about to commune with a Being who holds her destiny in his hands, but who, notwithstanding his power and might, encouraged her to come, and will condescend and even delight to listen to her prayer. She bows her knee before him, and lifts her imploring eyes to heaven. Oh, hallowed moment! Oh, interesting sight! Listen to the language of her heart. For what does she plead? It is for her dear children. What does she ask for them? Not the riches of earth, nor the plaudits of surrounding admirers, nor the external gracefulness and beauty of youth. These are, in her estimation, of little value. Instead of these, she asks for her dear ones the protecting care of God, and for strength to discharge her duty towards them. With what anxious solicitude is each one remembered before him, from the absent son on the boisterous ocean, to the unconscious babe of her bosom. She asks, that from the earliest lispings of infancy, the best tribute of their hearts may ascend to their Creator. With what increased earnestness does she plead, as the recollection of the many snares and temptations which they must encounter, crosses her anxious mind. It is then she feels her own weakness, and her entire dependence upon God. It is then she sees her need of Divine assistance and support, and the vast importance of maternal prayer. It is then she fervently exclaims, "Of myself I can do nothing; oh, thou who holdest the hearts of my children in thy hand, I bless thee for this resource." I know that the mother's prayer of faith will avail much. When the season of prayer is over, she leaves her chamber with a spirit refreshed and invigorated; with a mind untroubled. She has left all in the hand of God. The serenity of her soul is visible in her countenance. It sweetens every duty, and influences all her conduct. Praying mother, surely thou art blest.—*Selected.*

PROGRESS IN CRIME.—A few years ago, as I was walking through my native village, on an errand in the dusk of the evening, I saw two young men rush from a shop, one pursuing the other. They were brothers—The oldest had a leathern strap in his hand. He caught his brother, and after a severe struggle, in which many blows were given and received, succeeded in throwing him down, and severely whipping him with the strap. I was then a child, and the scene produced an impression upon my mind, which will never pass away. This occurred about fifteen years ago. Since that time, I have neither seen nor heard from these two individuals, till a few days since, I read in a newspaper, that this very person, who then whipt his brother, is sentenced to death for the murder of his wife! The two events I could not but connect in my mind, though fifteen years apart. What a warning to parents to restrain the passions of their children. What a warning to children to avoid contention and check the risigns of anger.—*Abbot.*

THE DAUGHTER'S REPROOF.—I once visited a poor miserable dwelling, when I heard a very bad man using wicked and cruel language to his wife, who was confined to her bed by illness; it was fearful to see and hear him, and I am sorry to say, I had not the courage to speak to him—I actually trembled with horror and dread. But a little sick girl, about eleven years of age that was dying of a consumption, went to the angry man, and laid her small, emaciated hand upon his arm, and looking up in his face said: "Father, don't speak so, God hears all we say; pray don't speak so, father." She uttered these few words with such tender earnestness, and such loving gentleness, that her feeble, trembling voice touched the heart of the angry man and he was silent for a moment, ann then he said: "I will do anything that child tells me to do, for she's an angel. His fierce nature was subdued; goodness and love had made this little child one of God's minestering angels to her wicked father.

COSTLINESS OE RELIGION.—Christians, in the land of civil and religious freedom, where every one can do what is right in his own eyes, sometimes complain of the calls upon their purse for the support of religious worship at home, and the diffusion of its blessings abroad; but Christianity compared with any of the numerous forms of heathenism, is a cheap religion apart from its healthful influence on all the social and domestic interest of man. Let any one, who doubts this, read Rev. Mr. Kincaird's description of the pagodas in Burmah, found in the "Missionary Memorial," from which the following is an extract:

"It was near evening when we came before Megoon, the largest padoda, or temple, in the Empire. The grandfather of the present reigning monarch of Burmah reared this vast pile. In the centre of the enormous structure, covering many acres, in a room twenty cubits square, are placed images of each member of the royal family, made of pure gold, and the amount of gold in each image is equal in weight to the individual for whom it was made; and also images of each nobleman in the Empire, of pure silver, and the silver weighed against each man. Everything about this pagoda is on a scale of vastness almost overpowering. As a specimen, the two lions that guard the massive stairs leading from the river up to the sacred enclosure, though in a couching posture, are *ninety* feet high.—*Courier.*

ANGER.—Fight hard against a hasty temper.—Anger will come, but resist it stoutly. A spark may set a house on fire. A fit of passion may give you cause to mourn all the days of your life. Never revenge an injury.

'He that revenges knows no rest;
The meek possess a peaceful breast."

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We will mention in the outset that no universal panacea will be found in its pages. We have never heard a secret worth knowing from, nor been cured of a deadly disease, by an Indian, or a seventh son of a seventh son, or any of the genus; the medical pretension of all which we utterly loathe and despise.

Preceded by a short introduction on Physiology, and a view of the Natural and Linnæan Systems, the work will be devoted to a separate consideration of each plant.—Together with our own information, we shall draw on the standard works on Chemistry, Botany, and Medicine, combining every useful item of knowledge, and without lessening its value, present it in a concise and pleasing form. Obtaining our supplies from the same sources as the bee, we hope to *secrete* as elegant a sweet for the mind, as it does for the body. The properties of each, more especially the medicinal, will be confirmed, in a great number of instances, by personal experience. To this will be added its history; its meaning in the language of flowers; and poetry, either original or selected from the gems of the children of song.

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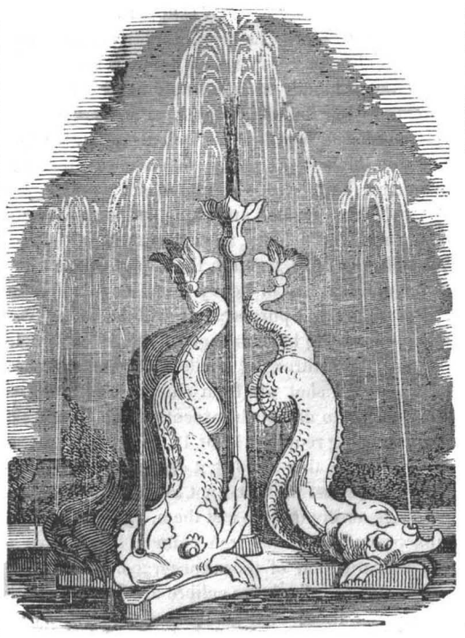

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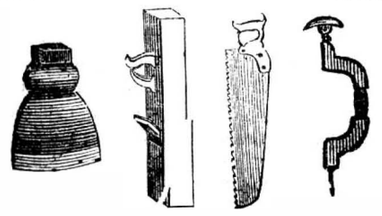

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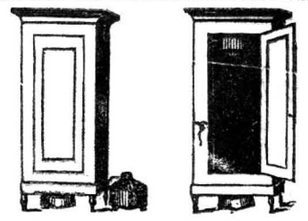

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